Complete Summary

GUIDELINE TITLE

ACR Appropriateness Criteria™ for follow-up and retreatment of brain metastases.

BIBLIOGRAPHIC SOURCE(S)

Simpson JR, Mendenhall WM, Schupak KD, Larson D, Bloomer WD, Buckley JA, Gaspar LE, Gibbs FA, Lewin AA, Loeffler JS, Malcolm AW, Schneider JF, Shaw EG, Wharam MD Jr, Gutin PH, Rogers L, Leibel S. Follow-up and retreatment of brain metastases. American College of Radiology. ACR Appropriateness Criteria. Radiology 2000 Jun;215(Suppl):1129-35. [32 references]

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Brain Metastases

GUIDELINE CATEGORY

Treatment

CLINICAL SPECIALTY

Neurological Surgery
Neurology
Oncology
Radiation Oncology
Radiology

INTENDED USERS

Health Plans
Hospitals
Managed Care Organizations
Physicians
Utilization Management

GUIDELINE OBJECTIVE(S)

To evaluate the treatment procedures for follow-up and retreatment of brain metastases.

TARGET POPULATION

Patients requiring follow-up and retreatment of brain metastasis

INTERVENTIONS AND PRACTICES CONSIDERED

1. Surgical resection
2. Stereotactic radiosurgery
3. External beam radiotherapy
4. Observation

MAJOR OUTCOMES CONSIDERED

- Morbidity or mortality
- Improved care
- Median survival time

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The guideline developer performed literature searches of recent peer-reviewed medical journals, primarily using the National Library of Medicine's MEDLINE database. The developer identified and collected the major applicable articles

NUMBER OF SOURCE DOCUMENTS

The total number of source documents identified as the result of the literature search is not known.

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus (Delphi Method)
Weighting According to a Rating Scheme (Scheme Not Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

One or two topic leaders within a panel assume the responsibility of developing an evidence table for each clinical condition, based on analysis of the current literature. These tables serve as a basis for developing a narrative specific to each clinical condition.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus (Delphi)

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Since data available from existing scientific studies are usually insufficient for meta-analysis, broad-based consensus techniques are needed to reach agreement in the formulation of the Appropriateness Criteria. Serial surveys are conducted by distributing questionnaires to consolidate expert opinions within each panel. These questionnaires are distributed to the participants along with the evidence table and narrative as developed by the topic leader(s). Questionnaires are completed by the participants in their own professional setting without influence of the other members. Voting is conducted using a scoring system from 1-9, indicating the least to the most appropriate imaging examination or therapeutic procedure. The survey results are collected, tabulated in anonymous fashion, and redistributed after each round. A maximum of three rounds is conducted and opinions are unified to the highest degree possible. Eighty (80) percent agreement is considered a consensus. If consensus cannot be reached by this method, the panel is convened and group consensus techniques are utilized. The strengths and weaknesses of each test or procedure are discussed and consensus reached whenever possible.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Criteria developed by the Expert Panels are reviewed by the American College of Radiology (ACR) Committee on Appropriateness Criteria and the Chair of the ACR Board of Chancellors.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

ACR Appropriateness Criteria™

Clinical Condition: Follow-up and Retreatment of Brain Metastasis

Variant 1: 50-year-old man with a 2.5 cm recurrent solitary brain metastasis in the initial brain site following surgery and whole brain/35Gy/14 fractions radiation therapy one year ago; lung primary two years ago status-post resection without recurrence in chest. Karnofsky Performance Status 80.

Treatment	Appropriateness Rating	Comments
Surgical Resection	8	
Stereotactic Radiosurgery	8	
External Beam Radiotherapy	2	
Observation	2	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

Variant 2: 50-year-old man with a recurrent 2.5 cm solitary brain metastasis in the initial brain site following surgery and whole brain/30Gy/10 fractions radiation therapy one year ago; lung primary, status-post resection one year ago, now with the recurrence in chest. Karnofsky Performance Status 70.

Treatment	Appropriateness Rating	Comments
Stereotactic	8	

Radiosurgery		
External Beam Radiotherapy	3	
Surgical Resection	2	
Observation	2	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

Variant 3: 50-year-old man with a recurrent solitary 5 cm brain metastasis in the initial brain site following surgery and whole brain/35Gy/14 fractions radiation therapy one year ago; lung primary, status-post resection three years ago, now with limited bone metastasis and recurrence in chest. Karnofsky Performance Status 70.

Treatment	Appropriateness Rating	Comments
External Beam Radiotherapy	6	
Surgical Resection	2	
Stereotactic Radiosurgery	2	
Observation	2	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

Variant 4: 60-year-old woman with four recurrent, maximum 2 cm diameter brain metastases (two hemispheres) following whole brain/35Gy/10 fractions radiation therapy six months ago with good response; breast primary six years ago, now with no other systemic recurrence. Karnofsky Performance Status 90.

Treatment	Appropriateness Rating	Comments

Stereotactic Radiosurgery	8	
External Beam Radiotherapy	4	
Surgical Resection	2	
Observation	2	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

Variant 5: 60-year-old woman with four recurrent brain metastases (two hemispheres) following whole brain/30Gy/10 fractions radiation therapy six months ago with poor response; breast primary six years ago, now also with recurrence in chest wall. Karnofsky Performance Status 70.

Treatment	Appropriateness Rating	Comments
Stereotactic Radiosurgery	7	If size does not exclude from radiosurgery.
Surgical Resection	2	
External Beam Radiotherapy	2	
Observation	2	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

Variant 6: 65-year-old woman with three recurrent brain metastases (frontal, cerebellar, occipital; all superficial, all 2-3 cm) 14 months following radiosurgery and whole brain/35Gy/14 fractions radiation therapy for a solitary metastasis. Had melanoma primary three years ago, controlled. Karnofsky Performance Status 80.

Treatment	Appropriateness Rating	Comments

Stereotactic Radiosurgery	8	
Surgical Resection	3	
External Beam Radiotherapy	2	
Observation	2	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

Variant 7: 62-year-old man with persistent solitary brain metastasis involving the anterior temporal lobe, 2 cm after whole brain/30Gy/10 fractions radiation therapy alone five months ago. Patient is a poor operative risk (location, comorbid conditions). Had renal cell primary six years ago with no local recurrence. Karnofsky Performance Status 70.

Treatment	Appropriateness Rating	Comments
Stereotactic Radiosurgery	8	
Surgical Resection	2	
External Beam Radiotherapy	2	
Observation	2	
Appropriateness Criteria Scale 1 2 3 4 5 6 7 8 9 1=Least appropriate 9=Most appropriate		

Summary (Summarized by the National Guideline Clearinghouse)

Three treatment options for patients with (cancer) recurrence in the brain are repeated radiation therapy, repeated surgery, and stereotactic radiosurgery.

Reoperation has been recommended for accessible lesions in patients with a high Karnofsky Performance Status (KPS) score. See discussion in the full-text guideline document.

An argument for reirradiation was advanced by a group of researchers who concluded that patients remaining in good general condition with neurologic deterioration ≥4 months after response to initial palliative irradiation should be considered for such therapy. Additional discussion can be found in the full-text guideline document.

Stereotactic radiosurgery as a potential treatment of recurrent brain metastases has been reported from several centers. See the full-text guideline document for a review of studies on this intervention.

CLINICAL ALGORITHM(S)

Algorithms were not developed from criteria guidelines.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The recommendations are based on analysis of the current literature and expert panel consensus.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate follow-up and retreatment of brain metastasis.

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

An American College of Radiology (ACR) Committee on Appropriateness Criteria and its expert panels have developed criteria for determining appropriate imaging examinations for diagnosis and treatment of specified medical condition(s). These criteria are intended to guide radiologists, radiation oncologists and referring physicians in making decisions regarding radiologic imaging and treatment. Generally, the complexity and severity of a patient's clinical condition should dictate the selection of appropriate imaging procedures or treatments. Only those exams generally used for evaluation of the patient's condition are ranked. Other imaging studies necessary to evaluate other co-existent diseases or other medical consequences of this condition are not considered in this document. The availability of equipment or personnel may influence the selection of appropriate imaging procedures or treatments. Imaging techniques classified as investigational by the U.S. Food and Drug Administration (FDA) have not been considered in developing these criteria; however, study of new equipment and

applications should be encouraged. The ultimate decision regarding the appropriateness of any specific radiologic examination or treatment must be made by the referring physician and radiologist in light of all the circumstances presented in an individual examination.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Simpson JR, Mendenhall WM, Schupak KD, Larson D, Bloomer WD, Buckley JA, Gaspar LE, Gibbs FA, Lewin AA, Loeffler JS, Malcolm AW, Schneider JF, Shaw EG, Wharam MD Jr, Gutin PH, Rogers L, Leibel S. Follow-up and retreatment of brain metastases. American College of Radiology. ACR Appropriateness Criteria. Radiology 2000 Jun;215(Suppl):1129-35. [32 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1999

GUIDELINE DEVELOPER(S)

American College of Radiology - Medical Specialty Society

SOURCE(S) OF FUNDING

The American College of Radiology (ACR) provided the funding and the resources for these ACR Appropriateness Criteria™

GUIDELINE COMMITTEE

ACR Appropriateness Criteria™ Committee, Expert Panel on Radiation Oncology-Brain Metastases Work Group.

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Names of Panel Members: Joseph R. Simpson, MD; William M. Mendenhall, MD; Karen D. Schupak, MD; David Larson, MD, PhD; William D. Bloomer, MD; Judith A. Buckley, MD; Laurie E. Gaspar, MD; Frederic A. Gibbs, MD; Alan A. Lewin, MD; Jay S. Loeffler, MD; Arnold W. Malcolm, MD; Joseph F. Schneider, MD; Edward G. Shaw, MD; Moody D. Wharam, Jr., MD; Phillip H. Gutin, MD; Lisa Rogers, DO; Steven Leibel, MD

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

The ACR Appropriateness Criteria™ are reviewed after five years, if not sooner, depending upon introduction of new and highly significant scientific evidence. The next review date for this topic is 2004.

GUIDELINE AVAILABILITY

Electronic copies: Available from the American College of Radiology (ACR) Web site.

Print copies: Available from ACR, 1891 Preston White Drive, Reston, VA 20191. Telephone: (703) 648-8900.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on January 30, 2001. The information was verified by the guideline developer as of February 20, 2001.

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